BIOLOGY TECHNICAL NOTE

This Technical Note provides planners with four Wildlife Habitat Evaluation Guides (WHEG) based on land use—Crop, Pasture, Range and Forest Land Uses—and a Pollinator Habitat Evaluation Guide (PHEG) for evaluating habitat for pollinators on any land use.

WILDLIFE HABITAT EVALUATION GUIDES FOR MONTANA

Wildlife Habitat Evaluation Guides (WHEG) provide the NRCS planner with a relatively simple and objective procedure for determining the value of wildlife habitat on any Conservation Treatment Unit (CTU), which may consist of one or more fields or even an entire farm. The guides can be used on land where wildlife is a primary resource concern, or on land (such as farmland) where wildlife is a secondary resource concern. They can be used to evaluate habitat on planning units for rangeland, cropland, pastureland, forestland, or conservation planning units for wildlife. Planning unit boundaries for wildlife may coincide with those delineated for rangeland, cropland, pastureland, or forestland; or a wildlife planning unit may be delineated that includes two or more land uses. There is no minimum size for land to be appraised as wildlife habitat. However, tracts of less than 40 acres may be limited as habitat by their size alone.

The Guides are based on the following assumptions:

1. All land and waters provide habitat for wildlife.
2. The quality of habitat is variable depending on the quality, quantity, and interspersion of food, cover, water, and space.
3. Habitat elements can be measured and compared to optimal conditions. Elements were selected to provide a measure of habitat diversity.
4. Wildlife populations are proportional to the quality and quantity of habitat available. A 400-acre planning unit may have potential to provide more diverse habitat and thus a greater variety of wildlife than does a 40-acre unit. Wildlife use of an area is dependent upon the quality of habitats it supports and the area's size.

These Guides can be used to determine if a CTU meets the minimum planning criteria found in Field Office Technical Guide (FOTG), Section III, Resource Concerns and Planning Criteria. Conservation practices and management measures can be identified to meet the minimum RMS standard, or to meet higher habitat quality objectives of the landowner. These Guides are not intended to be used to evaluate the potential for introducing wildlife species not presently found on the planning unit.

The WHEGs utilize a numerical rating to compare the value of existing wildlife habitat with the value of wildlife habitat under various alternatives. The Guides have been developed to consider the needs of a variety of species using a particular land-use/cover-type, a goal commonly referred to as management for species richness. They were not developed to evaluate the habitat quality for selected or featured species. The Guides may not reflect complete habitat needs or home range requirements for any particular wildlife species. They are intended to evaluate habitat richness or diversity of the planning unit. A planning unit that exhibits high habitat

diversity is likely to have equally diverse fauna. The crop land use habitat guide, for instance, evaluates habitat components for a variety of wildlife species—game and non-game—commonly inhabiting crop Land Uses, not just pheasants. When a landowner is interested in improving or managing habitat for a particular species, a species-specific habitat model may be used. To date, a limited number of species-specific habitat models have been developed. If you have need for a specific model, contact the State Biologist.

Instructions for Using the Wildlife Habitat Evaluation Guides

1. Determine the landowner or land user's objectives regarding their overall conservation program, interest in wildlife, and the specific conservation practices desired. Does the landowner wish to increase specific wildlife populations or maintain at present levels?

2. Based on your or the land user's knowledge of the planning area, identify the wildlife species present on the area and their seasons of use. Are threatened or endangered species present, or other species that require special attention? Be sure to consult with Montana Department of Fish, Wildlife and Parks and U.S. Fish and Wildlife Service biologists who are familiar with the planning area. The Montana Natural Heritage Program website has a list of species of special concern (http://mtnhp.org/). The U.S. Fish and Wildlife Service website has a list of federally listed/proposed/candidate species and their respective designated critical habitats (http://www.fws.gov/montanafieldoffice/Endangered_Species.html).

3. Delineate the conservation treatment unit to be evaluated on an aerial photo or other suitable planning map. Wildlife planning units should be delineated by the appropriate land use—Crop, Pasture, Range and Forest Land Uses—after considering the types of habitat that occur on the farm, ranch, or CTU. Large or complex units may require the use of more than one guide (i.e., crop and range) to evaluate wildlife habitat suitability.

4. Use best available information for soil suitability and methods for the establishment of plants for wildlife.

5. Rating habitat quality and quantity is best done in the field with the landowner. Visit enough of the planning area to accurately evaluate habitat conditions. Keep in mind that these are guides. When encountering situations not specifically covered, use judgment to rate such elements. These Guides can be completed while also collecting other resource information, such as range condition, woodland site index or RUSLE II data.

   Rate only factors which are applicable on the CTU. For example, when rating farmland, if no wetlands are present, do not rate this factor. Do not assign a value of zero if a factor is not present unless the WHEG specifically assigns a value of zero to that factor. Be sure to adjust the number of factors inventoried when calculating the habitat value if no rating is given to one or more factors. Do not interpolate between numerical values when rating a factor – use the values provided on the form.

6. After total habitat values have been determined, look back through individual scores to find those factors that are deficient and could be improved. Any habitat element(s) that scores less than 0.5 is considered as a limiting factor. Habitat improvement efforts should be directed to overcome such limitations. Compare those deficient factors with the soils interpretation. For example, if on a cropland planning unit, a score of 0 or 0.4 for woody vegetation is indicated, refer to the Soil Survey to find the potential for growing shrubs, hardwoods, and conifers.

7. Calculating the Habitat Value:

   Total the scores for the factors rated and divide this total by the number of factors rated, not the total number of factors.

   For example, when rating an area where crop is the land use and if no wetlands are present, do not rate that factor and reduce the number of factors by one.

   $$\text{HABITAT VALUE:} \frac{\text{Total Score}}{\text{Number of Factors Rated}}$$

8. With the landowner, develop alternatives for improving deficient factors. A conservation cropping system may improve crop habitat quality. A small clear cut of merchantable timber may be used to create a forest opening. A planned grazing system will not only improve the score for that factor but may in time lead to improved range condition. A stock pond will provide drinking water for wildlife as well as livestock. Shelterbelts may offset the lack of trees and shrubs. If alternatives are developed, then document the existing site conditions under the existing column of the form and then list the alternative scores under alterative 1 and/or 2 of the form. Document the proposed alternative actions in the note sections of each habitat element considered.

   For further planning guidance, refer to the Montana Biology Technical Notes and the FOTG, Section IV, practice standards, Wildlife Upland Habitat Management (Code 645) and Wildlife Wetland Habitat Management (Code 644).

WILDLIFE HABITAT EVALUATION GUIDE

Crop Land Use [1/]

Owner/Operator	Acres in Planning Unit	Field Number(s)

1. Landowner's wildlife objective (Wildlife for Sport Hunting, Personal Enjoyment, etc.):

2. Wildlife species commonly found on the conservation planning unit and their season of use:

3. Evaluation of Existing Habitat Elements:

A. Cropland Quality

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
No-till system. No summer fallow. (Flex crop OK; See Practice Specification Conservation Crop Rotation (Code 328). Pesticides and fertilizer applied only according to Nutrient/Pest Management Plan.	0.8			
Mulch till. No summer fallow (Flex crop OK) Nutrient/Pest Management Plan in place. At least 30% crop residue cover year long.	0.6			
Mulch till; ≥ 30% residue cover over winter.	0.5			
Conventional crop/fallow; 10-30% residue cover over winter.	0.3			
Conventional crop/fallow; ≤ 10% winter residue cover.	0.1			

SCORE THIS CRITERIA A "0" IF NO CROPLAND, FOOD PLOTS OR SIGNIFICANT AREAS OF ANNUAL WEED PRODUCTION OCCUR ON THE PROPERTY; N/A IF CROPLAND IS ABSENT BUT SEED SOURCE IS ADEQUATE IN THE FORM OF FOOD PLOTS AND/OR WEEDY AREAS.

ADD: (Maximum Score = 1.0)
0.2 POINTS FOR FOOD PLOTS/UNHARVESTED CROPS FOR WILDLIFE
0.2 POINTS FOR USE OF WOODY OR HERBACEOUS FIELD BORDERS
0.1 POINT FOR WINTER WHEAT IN ROTATION
0.1 POINT FOR GRASS/LEGUME ROTATION
0.1 POINT FOR COVER CROPS PLANTED AFTER HARVEST

[1/] Crop: Land used primarily for the production and harvest of annual or perennial field, forage, food, fiber, horticultural, orchards, vineyards and/or energy crops (e.g., small grains, row crops, corn, sugar beets, oil seed crops, potatoes, etc.). Hay may be in rotation with crops.

A. Cropland Quality (continued)

SUBTRACT:
0.1 POINTS FOR CROPS WITH FULL WIDTH TILLAGE FOR HARVEST (E.G., SUGAR BEETS, POTATOES, ETC.).

NOTES:

B. Percent of Assessment Area that is Un-cultivated

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
20 - 75%	1.0			
5 - 20% or 75 - 80%	0.5			
3 - <5% or >80 - 90%	0.3			
<3% or >90%	0.0			

SUBTRACT:
0.2 POINTS FOR GRAZING WITHOUT A PLANNED GRAZING SYSTEM.

NOTES:

C. Percent of Un-cultivated Area in Winter Cover (e.g., trees, brush, shelterbelts, cattails/bulrushes)

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
20 - 50%	1.0			
10 - <20% or >50 - 65%	0.5			
5 - <10% or >65 - 70%	0.3			
<5% or >70%	0.0			

NOTES:

D. Percent of Un-cultivated Area in Nesting Cover (e.g., tall grass, grass/legume mixtures, brush/grass)

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
50 - 75%	1.0			
25 - <50% or >75 - 80%	0.5			
10 - <25% or >80 - 85%	0.3			
<10% or >85%	0.0			

NOTE: ONLY COUNT AREAS THAT ARE UN-DISTURBED THROUGHOUT THE NESTING SEASON (APRIL 15 - JULY 15). TALL RANK GRASSES, SUCH AS TALL WHEATGRASS AND BASIN WILDRYE QUALIFY AS BOTH WINTER AND NESTING COVER.

NOTES:

E. Herbaceous Vegetation Quality [2/]

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Specifically managed for wildlife nesting/ brood/roosting cover (i.e., management activities: grazing, burning, disking, haying) are conducted outside of the primary nesting season (see practice standard, Upland Wildlife Habitat Management (Code 645), are only used as tools to restore plant vigor and are generally excluded.	0.8			
Herbaceous cover is in a long-term set-aside program.	0.9			
Grazed/burned/hayed occasionally (1 of 5 years max.) and after July 15, in most years.	0.8			
Hay cut after July 15, and before August 10, or grazed after June 1. Minimum of 10 inches of standing herbaceous cover over winter.	0.7			
Hay cut after July 1, but before August 10, or grazed after June 1. Minimum of 7 inches of standing herbaceous cover over winter.	0.5			

E. Herbaceous Vegetation Quality [2/] (continued)

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Hay cut only once per year before July 1 or grazed before June 1. Minimum of 4 inches of standing herbaceous cover over winter.	0.3			
Two or more annual hay cuttings (first cutting in June) or grazed before May 1.	0.1			

SUBTRACT:
0.2 POINTS FOR SEASON-LONG, CONTINUOUS GRAZING
0.2 POINTS FOR ANNUAL BURNING OR MOWING OF DITCHBANKS/ROADSIDES
0.2 POINTS FOR LACK OF ACTIVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN
0.1 POINT FOR GRASS MONOCULTURES (i.e., NO LEGUMES OR FORBS)
0.1 POINT FOR HARVESTING WHICH HERDS WILDLIFE TO CENTER OF FIELD

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS FOR NEST COVER IN BLOCKS OF ≥ 40 ACRES

NOTES:

F. Interspersion of Habitat Components

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Distance from center of fields to permanent cover (3 or more acres) such as trees/brush, un-disturbed herbaceous vegetation, wetland, etc. <400 feet	1.0			
400 - 800 feet	0.7			
800 - 1,300 feet	0.5			
1,300 - 1,800 feet	0.3			
>1,800 feet	0.1			

NOTES:

[2/] Includes hay (in a cropland rotation), grass waterways, weedy fence rows, odd areas, etc. Herbaceous vegetation serves as nesting, forage, and/or concealment cover.

G. Condition of Wetland Habitat (N/A if no wetlands are present naturally)
Mean Wetland Score (Average of Items 1-3)_____

1. Hydrological Integrity

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
No hydrological modifications.	1.0			
Minor hydrological modification. Primary hydrologic functions still present. For example: vegetation alterations such as removal of woody vegetation or light grazing.	0.7			
Moderate hydrological modifications. Hydrological functions are impaired and are not fully functional. For example: negative impacts from farming operations or substantial grazing.	0.5			
Significant hydrological modification. Hydrological functions have been significantly impaired to the extent that wetland criteria are not being met. For example: wetland fill, drainage ditches, stock water pits, drain tile, or pumping activities.	0.1			

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS IF WETLANDS ARE PROTECTED FROM SEDIMENTATION BY VEGETATIVE BUFFERS.

NOTES:

2. Native Hydrophytic Vegetation Integrity

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Native hydrophytic vegetation (all canopy layers) predominates.	1.0			
Native hydrophytic vegetation predominates; some reduction in structural diversity (i.e., invasion of non-native species and/or partial loss of one or more plant canopy layers).	0.5			
Non-native plant species predominate.	0.3			
The following noxious weeds are present and not actively being controlled: purple loosestrife, common tansy, Eurasian milfoil, flowering rush, curlyleaf pondweed, salt cedar.	0.1			

2. Native Hydrophytic Vegetation Integrity (continued)

SUBTRACT:
0.2 POINTS FOR LACK OF ACTIVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN (SPECIES NOT LISTED ABOVE).

NOTES:

3. Wetland Management

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Wetland habitat is managed for wildlife.	1.0			
Light grazing (only occasional livestock use or use a rotational grazing system that does not allow deterioration of wetland vegetation), or occasional (one of five years) haying, but not cultivated.	0.7			
Moderate grazing (vegetative buffer present on at least half of shoreline), or frequent cultivation or haying.	0.4			
Heavy grazing or cultivation throughout the growing season.	0.2			

NOTES:

H. Riparian Habitat [3/] (N/A if not present)

Plant communities with structural characteristics providing vertical and horizontal habitat diversity for wildlife and shading to lower stream temperatures.

Plant Community Components

Grass/forb
Low shrub (<8' tall)
Tall shrub (>8' tall)
Tree

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Plant community with all 4 of the above components	0.8			
Plant community with all 3 of the above components	0.6			
Plant community with all 2 of the above components	0.4			
Plant community with all 1 of the above components	0.1			

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS FOR RIPARIAN STANDS WITH ALL OF THE FOLLOWING: TALL (MATURE) TREE; MID-CANOPY TREE; TALL SHRUB; LOW SHRUB/HERBACEOUS LAYERS PRESENT; WOODY PLANTS ARE REGENERATING.

SUBTRACT:
0.2 POINTS FOR GRAZING WITHOUT A PLANNED GRAZING SYSTEM THAT INCLUDES SPECIFIC RIPARIAN MANAGEMENT OBJECTIVES.
0.2 POINTS FOR LACK OF ACTIVE CONTROL OF SALT CEDAR OR RUSSIAN OLIVE.
0.1 POINTS FOR LACK OF ACTIVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN.

NOTES: SOME RIPARIAN HABITATS DO NOT HAVE THE POTENTIAL FOR ALL FOUR OF THE PLANT COMMUNITY COMPONENTS LISTED ABOVE. LOW GRADIENT, "WET MEADOW" HABITATS, FOR EXAMPLE, MAY NOT SUPPORT ANY WOODY VEGETATION. MANY HIGHER ELEVATION STREAM-SIDE HABITATS MAY NOT HAVE THE POTENTIAL FOR COTTONWOODS AND OTHER TREE SPECIES. IN SUCH SITUATIONS, USE JUDGMENT IN COMPARING THE EXISTING RIPARIAN CONDITION WITH THE POTENTIAL CONDITION AND SCORE THE HABITAT ELEMENT ACCORDINGLY.

NOTES:

[3/] Rate riparian lands only when they occur within or immediately adjacent to the planning unit.

I. Condition of Stream Habitat (N/A if not present)

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
No channel/streambank alteration (i.e., Channelization and/or riprap); banks well vegetated with deep-rooted, native species; no active downcutting, channel widening, or excessive sediment deposition.	1.0			
No channel/streambank alteration; banks with minimal human-induced erosion or sediment deposition (may be evidence of past downcutting, now stabilized); native vegetation predominates.	0.7			
No channel/streambank alteration; shallow-rooted, introduced plants common; human-induced bank erosion, downcutting, or sediment deposition moderate.	0.4			
Excessive human-induced bank erosion, sediment deposition, or downcutting; or channel/bank alteration (e.g., channelization and/or riprap) on greater than 20% of the stream reach.	0.1			

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS FOR USE OF SCREENS TO PREVENT ENTRAINMENT OF FISH INTO IRRIGATION DITCHES
0.2 PASSAGE STRUCTURE TO ALLOW FREE MOVEMENT OF FISH (IF ECOLOGICALLY APPROPRIATE).

SUBTRACT:
0.2 POINT FOR LANDOWNER'S SEASONAL WATER WITHDRAWALS AND/OR DROP STRUCTURES, DAMS/DIVERSIONS THAT INHIBIT FISH MOVEMENT OR ACCESS TO IMPORTANT HABITATS ON LANDOWNER'S PROPERTY.

NOTE: CHANNEL/STREAMBANK ALTERATION INCLUDES RIPRAP, CHANNELIZATION, DREDGING, ETC. HUMAN-INDUCED EROSION INCLUDES GRAZING, RECREATION AND DEVELOPMENT IMPACTS.

NOTES:

J. Condition of Artificial Stock Ponds/Reservoirs (N/A if not present)

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Reservoir managed for wildlife (i.e., stock water piped away or use of water gap), and/or the shoreline is protected. This may include infrequent grazing and/or burning to achieve specific wildlife habitat objectives.	1.0			
Shoreline only occasionally used by livestock or pond is managed under a rotational grazing system that does not allow deterioration of shoreline vegetation (shoreline vegetation may be significantly grazed during a part of the rotation, but not more often than 1 in 3 years.)	0.8			
Vegetative buffer present on half of shoreline; remainder of shoreline vegetation adversely affected by grazing, cultivation, etc.	0.5			
Vegetative buffer present on half of shoreline because of livestock, cultivation, etc.	0.3			
Shoreline trampled and vegetation removed, e.g., bare ground, from intense livestock use or other disturbances.	0.1			

NOTES:

K. Condition of Woody Draws (N/A if not present)

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Closed canopy of tree* species with a diversity of age and size classes present. Shrub layer present with diverse age/size class distribution – dominated by multiple species. Herbaceous understory is at least 50% native species and includes both grasses and forbs.	1.0			
Tree* and shrub layers are missing younger age classes to a small degree. Herbaceous understory consists of less than 50% native species, but contains both forbs and grasses that are generally of good health and density.	0.6			
Tree* and shrub layers are missing younger and middle age classes from a moderate to significant degree. Herbaceous understory is degraded and consists of less than 25% native species. Forb component is generally lacking.	0.4			
Open stand of tree* species with little to no age and size class diversity. Horizontal shrub layer is reduced to absent; represented only by older individuals. Herbaceous layer is degraded and dominated by introduced grasses (e.g., smooth brome, quackgrass, Kentucky bluegrass).	0.1			

* IN WOODY DRAWS WHERE THERE IS NO POTENTIAL FOR TREES: APPLY THE CRITERIA AS WRITTEN FOR THE SHRUB AND HERBACEOUS CRITIERIA ONLY.

SUBTRACT:
0.2 POINTS FOR GRAZING WITHOUT A MANAGEMENT PLAN.
0.2 POINTS FOR LACK OF ACTVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN.
0.2 POINTS FOR WOODY DRAWS THAT HAVE RUSSIAN OLIVES PRESENT.

NOTES:

4. Summation of Habitat Elements

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
A. Cropland Quality	0.8			
B. Percent of Assessment Area that is Un-cultivated	1.0			
C. Percent of Un-cultivated Area in Winter Cover	1.0			
D. Percent of Un-cultivated Area in Nesting Cover	1.0			
E. Herbaceous Vegetation Quality	0.8			
F. Interspersion of Habitat Components	1.0			
G. Condition of Wetland Habitat	1.0			
H. Riparian Habitat	0.8			
I. Condition of Stream Habitat	1.0			
J. Condition of Stock Ponds/Reservoirs	1.0			
K. Condition of Woody Draws	1.0			
TOTAL				

5. Habitat Value [4/] = Total Score / Number of Inventory Factors Rated

6. Habitat elements in need of improvement: [5/]

NOTES:

7. Planning alternatives for improving habitat element deficiencies:

NOTES:

[4/] In order to meet the FOTG Quality Criteria for a Resource Management System, the planned system must provide a Habitat Value of 50% or higher (0.5 out of 1.0) for the CTU.

[5/] Any habitat element(s) (A through K) with a score of less than 0.5 may be considered as a limiting factor(s). Where possible and practical, direct habitat improvements to compensate for identified limitations.

WILDLIFE HABITAT EVALUATION GUIDE

Pasture Land Use [1/]

Owner/Operator	Acres in Planning Unit	Field Number(s)

1. Landowner's wildlife objective (Wildlife for Sport Hunting, Personal Enjoyment, etc.):

2. Wildlife species commonly found on the conservation planning unit and their season of use:

3. Evaluation of Existing Habitat Elements:

A. Percent of Assessment Area that is Un-cultivated (N/A as appropriate)

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
20 - 75%	1.0			
5 - 20% or 75 - 80%	0.5			
3 - <5% or >80 - 90%	0.3			
<3% or >90%	0.0			

SUBTRACT:
0.2 POINTS FOR GRAZING WITHOUT A PLANNED GRAZING SYSTEM.

NOTES:

[1/] Pasture: Lands composed of introduced or domesticated native forage species that are used primarily for the production of livestock. They receive periodic renovation and/or cultural treatments, such as tillage, fertilization, mowing, weed control, and may be irrigated. They are not in rotation with crops.

B. Percent of Area in Winter Cover (e.g., trees, brush, shelterbelts, cattails/bulrushes)

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
20 - 50%	1.0			
10 - <20% or >50 - 65%	0.5			
5 - <10% or >65 - 70%	0.3			
<5% or >70%	0.0			

NOTES:

C. Percent of Area in Nesting Cover (e.g., tall grass, grass/legume mixtures, brush/grass)

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
50 - 75%	1.0			
25 - <50% or >75 - 80%	0.5			
10 - <25% or >80 - 85%	0.3			
<10% or >85%	0.0			

NOTE: ONLY COUNT AREAS THAT ARE UN-DISTURBED THROUGHOUT THE NESTING SEASON (APRIL 15 - JULY 15). TALL RANK GRASSES, SUCH AS TALL WHEATGRASS AND BASIN WILDRYE QUALIFY AS BOTH WINTER AND NESTING COVER.

NOTES:

D. Herbaceous Vegetation Quality [2/]

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Specifically managed for wildlife nesting/ brood/roosting cover (i.e., management activities: grazing, burning, disking) are conducted outside of the primary nesting season (see practice standard, Upland Wildlife Habitat Management (Code 645), are only used as tools to restore plant vigor and are generally excluded.	0.8			
Herbaceous cover is in a long-term set-aside program.	0.9			
Grazed/burned/hayed occasionally (1 of 5 years max.) and after July 15, in most years.	0.8			
Grazed after June 1. Minimum of 10 inches of standing herbaceous cover over winter.	0.7			
Grazed after June 1. Minimum of 7 inches of standing herbaceous cover over winter.	0.5			
Grazed after June 1. Minimum of 4 inches of standing herbaceous cover over winter.	0.3			
Grazed before May 1.	0.1			

SUBTRACT:
0.2 POINTS FOR SEASON-LONG, CONTINUOUS GRAZING
0.2 POINTS FOR ANNUAL BURNING OR MOWING OF DITCHBANKS/ROADSIDES
0.2 POINTS FOR LACK OF ACTIVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN
0.1 POINT FOR GRASS MONOCULTURES (i.e., NO LEGUMES OR FORBS)

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS FOR NEST COVER IN BLOCKS OF $\geq$ 40 ACRES

0.2 POINTS FOR PRESENCE OF ANNUAL FOOD PLOTS OR UNHARVESTED GRAIN STRIPS W/IN 1/4 MILE.

NOTES:

[2/] Includes pasture, grass waterways, weedy fence rows, odd areas, etc. Herbaceous vegetation serves as nesting, forage, and/or concealment cover.

E. Interspersion of Habitat Components

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Distance from center of fields to permanent cover (3 or more acres) such as trees/brush, un-disturbed herbaceous vegetation, wetland, etc. <400 feet	1.0			
400 - 800 feet	0.7			
800 - 1,300 feet	0.5			
1,300 - 1,800 feet	0.3			
>1,800 feet	0.1			

NOTES:

F. Condition of Wetland Habitat (N/A if no wetlands are present naturally)

Mean Wetland Score (Average of Items 1-3)_____

1. Hydrological Integrity

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
No hydrological modifications.	1.0			
Minor hydrological modification. Primary hydrologic functions still present. For example: vegetation alterations such as removal of woody vegetation or light grazing.	0.7			
Moderate hydrological modifications. Hydrological functions are impaired and are not fully functional. For example: negative impacts from farming operations or substantial grazing.	0.5			
Significant hydrological modification. Hydrological functions have been significantly impaired to the extent that wetland criteria are not being met. For example: wetland fill, drainage ditches, stock water pits, drain tile, or pumping activities.	0.1			

ADD: (MAXIMUM SCORE = 1.0)

0.2 POINTS IF WETLANDS ARE PROTECTED FROM SEDIMENTATION BY VEGETATIVE BUFFERS.

1. Hydrological Integrity (continued)

NOTES:

2. Native Hydrophytic Vegetation Integrity

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Native hydrophytic vegetation (all canopy layers) predominates.	1.0			
Native hydrophytic vegetation predominates; some reduction in structural diversity (i.e., invasion of non-native species and/or partial loss of one or more plant canopy layers).	0.5			
Non-native plant species predominate.	0.3			
The following noxious weeds are present and not actively being controlled: purple loosestrife, common tansy, Eurasian milfoil, curlyleaf pondweed, flowering rush, salt cedar.	0.1			

SUBTRACT:
0.2 POINTS FOR LACK OF ACTIVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN (SPECIES NOT LISTED ABOVE).

NOTES:

3. Wetland Management

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Wetland habitat is managed for wildlife.	1.0			
Light grazing (only occasional livestock use or use a rotational grazing system that does not allow deterioration of wetland vegetation), or occasional (one of five years) haying, but not cultivated.	0.7			
Moderate grazing (vegetative buffer present on at least half of shoreline), or frequent cultivation or haying.	0.4			
Heavy grazing or cultivation throughout the growing season.	0.2			

3. Wetland Management (continued)

NOTES:

G. Riparian Habitat [3/] (N/A if not present)

Plant communities with structural characteristics providing vertical and horizontal habitat diversity for wildlife and shading to lower stream temperatures.

Plant Community Components
Grass/forb
Low shrub (<8' tall)
Tall shrub (>8' tall)
Tree

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Plant community with all 4 of the above components	0.8			
Plant community with all 3 of the above components	0.6			
Plant community with all 2 of the above components	0.4			
Plant community with all 1 of the above components	0.1			

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS FOR RIPARIAN STANDS WITH ALL OF THE FOLLOWING: TALL (MATURE) TREE; MID-CANOPY TREE; TALL SHRUB; LOW SHRUB/HERBACEOUS LAYERS PRESENT; WOODY PLANTS ARE REGENERATING.

SUBTRACT:
0.2 POINTS FOR GRAZING WITHOUT A PLANNED GRAZING SYSTEM THAT INCLUDES SPECIFIC RIPARIAN MANAGEMENT OBJECTIVES.
0.2 POINTS FOR LACK OF ACTIVE CONTROL OF SALT CEDAR OR RUSSIAN OLIVE.
0.1 POINTS FOR LACK OF ACTIVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN.

NOTES: SOME RIPARIAN HABITATS DO NOT HAVE THE POTENTIAL FOR ALL FOUR OF THE PLANT COMMUNITY COMPONENTS LISTED ABOVE. LOW GRADIENT, "WET MEADOW" HABITATS, FOR EXAMPLE, MAY NOT SUPPORT ANY WOODY VEGETATION. MANY HIGHER ELEVATION STREAM-SIDE HABITATS MAY NOT HAVE THE POTENTIAL FOR COTTONWOODS AND OTHER TREE SPECIES. IN SUCH SITUATIONS, USE JUDGMENT IN COMPARING THE EXISTING RIPARIAN CONDITION WITH THE POTENTIAL CONDITION AND SCORE THE HABITAT ELEMENT ACCORDINGLY.

NOTES:

[3/] Rate riparian lands only when they occur within or immediately adjacent to the planning unit.

H. Condition of Stream Habitat (N/A if not present)

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
No channel/streambank alteration (i.e., Channelization and/or riprap); banks well vegetated with deep-rooted, native species; no active downcutting, channel widening, or excessive sediment deposition.	1.0			
No channel/streambank alteration; banks with minimal human-induced erosion or sediment deposition (may be evidence of past downcutting, now stabilized); native vegetation predominates.	0.7			
No channel/streambank alteration; shallow-rooted, introduced plants common; human-induced bank erosion, downcutting, or sediment deposition moderate.	0.4			
Excessive human-induced bank erosion, sediment deposition, or downcutting; or channel/bank alteration, e.g., channelization, riprap, etc., on greater than 20% of the stream reach.	0.1			

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS FOR USE OF SCREENS TO PREVENT ENTRAINMENT OF FISH INTO IRRIGATION DITCHES
0.2 PASSAGE STRUCTURE TO ALLOW FREE MOVEMENT OF FISH (IF ECOLOGICALLY APPROPARIATE)

SUBTRACT:
0.2 POINT FOR LANDOWNER'S SEASONAL WATER WITHDRAWALS AND/OR DROP STRUCTURES, DAMS/ DIVERSIONS THAT INHIBIT FISH MOVEMENT OR ACCESS TO IMPORTANT HABITATS ON LANDOWNER'S PROPERTY.

NOTE: CHANNEL/STREAMBANK ALTERATION INCLUDES RIPRAP, CHANNELIZATION, DREDGING, ETC. HUMAN-INDUCED EROSION INCLUDES GRAZING, RECREATION AND DEVELOPMENT IMPACTS.

NOTES:

I. Condition of Artificial Stock Ponds/Reservoirs (N/A if not present)

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Reservoir managed for wildlife (i.e., stock water piped away or a water gap is used) and/or the shoreline is protected.	1.0			
Shoreline only occasionally used by livestock or pond is managed under a rotational grazing system that does not allow deterioration of shoreline vegetation (shoreline vegetation may be significantly grazed during a part of the rotation, but not more often than 1 in 3 years.)	0.8			
Vegetative buffer present on half of shoreline; remainder of shoreline vegetation adversely affected by grazing, cultivation, etc.	0.5			
Vegetative buffer present on less than half of shoreline because of livestock, cultivation, etc.	0.3			
Shoreline trampled and vegetation removed, e.g., bare ground, from intense livestock use or other disturbances.	0.1			

NOTES:

J. Condition of Woody Draws (N/A if not present)

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Closed canopy of tree* species with a diversity of age and size classes present. Shrub layer present with diverse age/size class distributed – dominated by multiple species. Herbaceous understory is at least 50% native species and includes both grasses and forbs.	1.0			
Tree* and shrub layers are missing younger age classes to a small degree. Herbaceous understory consists of less than 50% native species, but contains both forbs and grasses that are generally of good health and density.	0.6			
Tree* and shrub layers are missing younger and middle age classes from a moderate to significant degree. Herbaceous understory is degraded and consists of less than 25% native species. Forb component is generally lacking.	0.4			
Open Stand of tree* species with little to no age and size class diversity. Horizontal shrub layer is reduced to absent; represented only by older individuals. Herbaceous layer is degraded and dominated by introduced grasses (e.g., smooth brome, quackgrass, Kentucky bluegrass).	0.1			

* IN WOODY DRAWS WHERE THERE IS NO POTENTIAL FOR TREES: APPLY THE CRITERIA AS WRITTEN FOR THE SHRUB AND HERBACEOUS CRITIERIA ONLY.

SUBTRACT:
0.2 POINTS FOR GRAZING WITHOUT A MANAGEMENT PLAN.
0.2 POINTS FOR LACK OF ACTVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN.
0.2 POINTS FOR WOODY DRAWS THAT HAVE RUSSIAN OLIVES PRESENT.

NOTES:

4. Summation of Habitat Elements

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
A. Percent of Assessment Area that is Un-cultivated	1.0			
B. Percent of Area in Winter Cover	1.0			
C. Percent of Area in Nesting Cover	1.0			
D. Herbaceous Vegetation Quality	0.8			
E. Interspersion of Habitat Components	1.0			
F. Condition of Wetland Habitat	1.0			
G. Riparian Habitat	0.8			
H. Condition of Stream Habitat	1.0			
I. Condition of Artificial Stock Ponds/Reservoirs	1.0			
J. Condition of Woody Draws	1.0			
TOTAL				

5. Habitat Value [4/] = Total Score / Number of Inventory Factors Rated

6. Habitat elements in need of improvement: [5/]

NOTES:

7. Planning alternatives for improving habitat element deficiencies:

NOTES:

[4/] In order to meet the FOTG Planning criteria for a Resource Management System, the planned system must provide a Habitat Value of 50% or higher (0.5 out of 1.0) for the CTU.

[5/] Any habitat element(s) (A through J) with a score of less than 0.5 may be considered as a limiting factor(s). Where possible and practical, direct habitat improvements to compensate for identified limitations.

WILDLIFE HABITAT EVALUATION GUIDE

Range Land Use [1/]

Owner/Operator	Acres in Planning Unit	Field Number(s)

1. Landowner's wildlife objective (Wildlife for Sport Hunting, Personal Enjoyment, etc.):

2. Wildlife species commonly found on the conservation planning unit and their season of use:

3. Evaluation of Existing Habitat Elements:
   J. Condition of Woody Draws

A. Ecological Similarity Index

NOTE: FOR SEEDED OR INTRODUCED PLANTS, EVALUATE HABITAT ELEMENTS B THROUGH F ONLY.

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Similarity Index 51-100%	0.8			
Similarity Index 26-50%	0.5			
Similarity Index ≤ 25%	0.2			

NOTE: WHEN EVALUATING SAGE GROUSE HABITAT, i.e., SAGEBRUSH-GRASSLAND, SCORE IN THE NEXT HIGHEST CATEGORY WHEN SAGEBRUSH COVER IS BETWEEN 10-30% AND THE FORB/GRASS UNDERSTORY AND LITTER COVER ARE WELL DEVELOPED, BUT THE SIMILARITY INDEX HAS BEEN LOWERED BECAUSE OF SAGEBRUSH COMPOSITION.

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS IF UP TO 10% OF OTHERWISE HIGH SIMILARITY INDEX RANGE (51-100%) IS COMPOSED OF LOW SUCCESSIONAL SHORT GRASS HABITATS SUCH AS PRAIRIE DOG TOWNS AND CLOSELY GRAZED AREAS. THIS ADDS BIODIVERSITY WITHOUT SIGNIFICANTLY REDUCING FORAGE PRODUCTION OR ECOLOGICAL CONDITION.

SUBTRACT:
0.2 POINTS FOR LACK OF ACTIVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN
0.2 POINTS FOR SIGNIFICANT CONIFER ENCROACHMENT INTO GRASSLANDS OR SHRUB-STEPPE.

NOTES:

[1/] Range: Land used primarily for the production of grazing animals. This includes native plant communities and those areas seeded to native or introduced species or naturalized by introduced species that are ecologically managed using range management principles.

B. Grazing Management

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Grazing specifically planned to enhance wildlife habitat by providing residual herbaceous cover Fall through Spring (meets FOTG, Section IV, practice standards and specifications, Upland Wildlife Habitat Management (Code 645) and/or Wetland Wildlife Habitat Management (Code 644). Example: Grazing period (up to 70% utilization) followed by two growing seasons rest.	1.0			
Grazing system meets FOTG, Section IV, practice standard and specification, Prescribed Grazing (Code 528).	0.8			
Moderate, season-long grazing which does not exceed NRCS-recommended stocking rate. No planned system, or no grazing on unit.	0.5			
Heavy to excessive grazing with or without a planned system.	0.1			

NOTES:

C. Riparian Habitat [2/] (N/A if not present)

Plant communities with structural characteristics providing vertical and horizontal habitat diversity for wildlife and shading to lower stream temperatures.

Plant Community Components
Grass/forb
Low shrub (<8' tall)
Tall shrub (>8' tall)
Tree

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Plant community with all 4 of the above components	0.8			
Plant community with 3 of the above components	0.6			
Plant community with 2 of the above components	0.4			
Plant community with only 1 of the above components	0.1			

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS FOR RIPARIAN STANDS WITH ALL OF THE FOLLOWING: TALL (MATURE) TREE; MID-CANOPY TREE; TALL SHRUB; LOW SHRUB/HERBACEOUS LAYERS PRESENT; WOODY PLANTS ARE REGENERATING.

SUBTRACT:
0.2 POINTS FOR GRAZING WITHOUT A PLANNED GRAZING SYSTEM THAT INCLUDES SPECIFIC RIPARIAN MANAGEMENT OBJECTIVES.
0.2 POINTS FOR LACK OF ACTIVE CONTROL OF SALT CEDAR OR RUSSIAN OLIVE.
0.1 POINTS FOR LACK OF ACTIVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN.

NOTES: SOME RIPARIAN HABITATS DO NOT HAVE THE POTENTIAL FOR ALL FOUR OF THE PLANT COMMUNITY COMPONENTS LISTED ABOVE. LOW GRADIENT, "WET MEADOW" HABITATS, FOR EXAMPLE, MAY NOT SUPPORT ANY WOODY VEGETATION. MANY HIGHER ELEVATION STREAM-SIDE HABITATS MAY NOT HAVE THE POTENTIAL FOR COTTONWOODS AND OTHER TREE SPECIES. IN SUCH SITUATIONS, USE JUDGMENT IN COMPARING THE EXISTING RIPARIAN CONDITION WITH THE POTENTIAL CONDITION AND SCORE THE HABITAT ELEMENT ACCORDINGLY.

NOTES:

[2/] Rate riparian lands only when they occur within or immediately adjacent to the planning unit.

D. Condition of Stream Habitat (N/A if not present)

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
No channel/streambank alteration (i.e., channelization and/or riprap); banks well vegetated with deep-rooted, native species; no active downcutting, channel widening, or excessive sediment deposition.	1.0			
No channel/streambank alteration; banks with minimal human-induced erosion or sediment deposition (may be evidence of past downcutting, now stabilized); native vegetation predominates.	0.7			
No channel/streambank alteration; shallow-rooted, introduced plants common; human-induced bank erosion, downcutting, or sediment deposition moderate.	0.4			
Excessive human-induced bank erosion, sediment deposition, or downcutting; or channel/bank alteration, e.g., channelization, riprap, etc., on >20% of the stream reach.	0.1			

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS FOR USE OF SCREENS TO PREVENT ENTRAINMENT OF FISH INTO IRRIGATION DITCHES
0.2 PASSAGE STRUCTURE TO ALLOW FREE MOVEMENT OF FISH (IF ECOLOGICALLY APPROPRIATE).

SUBTRACT:
0.2 POINT FOR SEASONAL WATER WITHDRAWALS AND/OR DROP STRUCTURES, DAMS/DIVERSIONS THAT INHIBIT FISH MOVEMENT OR ACCESS TO IMPORTANT HABITATS ON LANDOWNER'S PROPERTY.

NOTE: CHANNEL/STREAMBANK ALTERATION INCLUDES RIPRAP, CHANNELIZATION, DREDGING, ETC. HUMAN-INDUCED EROSION INCLUDES GRAZING, RECREATION AND DEVELOPMENT IMPACTS.

NOTES:

E. Condition of Wetland Habitat (N/A if no wetlands are present naturally)
Mean Wetland Score (Average of Items 1-3) _____

1. Hydrological Integrity

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
No hydrological modifications.	1.0			
Minor hydrological modification. Primary hydrologic functions still present. For example: vegetation alterations such as removal of woody vegetation or light grazing.	0.7			
Moderate hydrological modifications. Hydrological functions are impaired and are not fully functional. For example: negative impacts from farming operations or substantial grazing.	0.5			
Significant hydrological modification. Hydrological functions have been significantly impaired to the extent that wetland criteria are not being met. For example: wetland fill, drainage ditches, stock water pits, drain tile, or pumping activities.	0.1			

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS IF WETLANDS ARE PROTECTED FROM SEDIMENTATION BY VEGETATIVE BUFFERS.

NOTES:

2. Native Hydrophytic Vegetation Integrity

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Native hydrophytic vegetation (all canopy layers) predominates.	1.0			
Native hydrophytic vegetation predominates; some reduction in structural diversity (i.e., invasion of non-native species and/or partial loss of one or more plant canopy layers).	0.5			
Non-native plant species predominate.	0.3			
The following noxious weeds are present and not actively being controlled: purple loosestrife, common tansy, Eurasian milfoil, curlyleaf pondweed, flowering rush, salt cedar.	0.1			

SUBTRACT:
0.2 POINTS FOR LACK OF ACTIVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN (SPECIES NOT LISTED ABOVE).

NOTES:

3. Wetland Management

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Wetland habitat is managed for wildlife.	1.0			
Light grazing (only occasional livestock use or use a rotational grazing system that does not allow deterioration of wetland vegetation), or occasional (one of five years) haying, but not cultivated.	0.7			
Moderate grazing (vegetative buffer present on at least half of shoreline), or frequent cultivation or haying.	0.4			
Heavy grazing or cultivation throughout the growing season.	0.2			

NOTES:

F. Condition of Artificial Stock Ponds/Reservoirs (N/A if not present)

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Reservoir managed for wildlife (i.e., stock water piped away or using a water gap) and/or the shoreline is protected.	1.0			
Shoreline only occasionally used by livestock or pond is managed under a rotational grazing system that does not allow deterioration of shoreline vegetation (shoreline vegetation may be significantly grazed during a part of the rotation, but not more often than 1 in 3 years.)	0.8			
Vegetative buffer present on half of shoreline; remainder of shoreline vegetation adversely affected by grazing, cultivation, etc.	0.5			
Vegetative buffer present on less than half of shoreline because of livestock, cultivation, etc.	0.3			
Shoreline trampled and vegetation removed, e.g., bare ground, from intense livestock use or other disturbances.	0.1			

NOTES:

G. Condition of Woody Draws (N/A if none are present)

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Closed canopy of tree* species with a diversity of age and size classes present. Shrub layer present with diverse age/size class distributed – dominated by multiple species. Herbaceous understory is at least 50% native species and includes both grasses and forbs.	1.0			
Tree* and shrub layers are missing younger age classes to a small degree. Herbaceous understory consists of less than 50% native species, but contains both forbs and grasses that are generally of good health and density.	0.6			
Tree* and shrub layers are missing younger and middle age classes from a moderate to significant degree. Herbaceous understory is degraded and consists of less than 25% native species. Forb component is generally lacking.	0.4			
Open Stand of tree* species with little to no age and size class diversity. Horizontal shrub layer is reduced to absent; represented only by older individuals. Herbaceous layer is degraded and dominated by introduced grasses (e.g., smooth brome, quackgrass, Kentucky bluegrass).	0.1			

* IN WOODY DRAWS WHERE THERE IS NO POTENTIAL FOR TREE: APPLY THE CRITERIA AS WRITTEN FOR THE SHRUB AND HERBACEOUS CRITIERIA ONLY.

SUBTRACT:
0.2 POINTS FOR GRAZING WITHOUT A MANAGEMENT PLAN.
0.2 POINTS FOR LACK OF ACTVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN.
0.2 POINTS FOR WOODY DRAWS THAT HAVE RUSSIAN OLIVES PRESENT.

NOTES:

4. Summation of Habitat Elements

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
A. Ecological Similarity Index	0.8			
B. Grazing Management	1.0			
C. Riparian Habitat	0.8			
D. Condition of Stream Habitat	1.0			
E. Condition of Wetland Habitat	1.0			
F. Condition of Artificial Stock Ponds/Reservoirs	1.0			
G. Condition of Woody Draws	1.0			
TOTAL				

5. Habitat Value [3/] = Total Score / Number of Inventory Factors Rated

6. Habitat elements in need of improvement: [4/]

NOTES:

7. Planning alternatives for improving habitat element deficiencies:

NOTES:

[3/] In order to meet the FOTG Planning criteria for a Resource Management System, the planned system must provide a Habitat Value of 50% or higher (0.5 out of 1.0) for the CTU.

[4/] Any habitat element(s) (A through G) with a score of less than 0.5 may be considered as a limiting factor(s). Where possible and practical, direct habitat improvements to compensate for identified limitations.

WILDLIFE HABITAT EVALUATION GUIDE

Forest Land Use [1/]

Owner/Operator	Acres in Planning Unit	Field Number(s)

1. Landowner's wildlife objective (Wildlife for Sport Hunting, Personal Enjoyment, etc.):

2. Wildlife species commonly found on the conservation planning unit and their season of use:

3. Evaluation of Existing Habitat Elements:

A. Forest Community

Composition (Community Diversity)

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Forest vegetation, a complex mosaic of communities consisting of more than 4 tree species, stands uneven-aged, interspersed with diverse under-story vegetation, with numerous irregular-shaped forest openings not more than 500 feet across, occupying 5-25 percent of area. Old growth management (e.g., managed to provide a continuous supply of large, old trees which stand above the main forest canopy).	1.0			
Forest vegetation dominated by only 3 or 4 species, stands uneven-aged, under-story abundant, but not as diverse as above, forest openings occasional, less than 500 feet across, occurring on 1-5 percent of area.	0.5			

[1/] Forest: Land on which the primary vegetation is tree cover (climax, natural or introduced plant community) and use is primarily for production of wood products and/or non-timber forest products.

A. Forest Community (continued)

Composition (Community Diversity)

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Forest vegetation dominated by only 1 or 2 tree species, stands even-aged, understory vegetation scant, no forest openings or opening few or larger than 500 feet across or openings great than 40 percent of area.	0.3			

SUBTRACT:
0.2 POINTS FOR LACK OF ACTIVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN.

NOTE: MANY EASTERN MONTANA FORESTS DO NOT HAVE THE POTENTIAL TO SUPPORT FOUR TREE SPECIES. PONDEROSA PINE AND ROCKY MOUNTAIN JUNIPER MAY BE THE ONLY TREES PRESENT EVEN IN VERY HIGH-CONDITION STANDS. IN THIS CASE, USE JUDGMENT IN COMPARING EXISTING CONDITIONS TO THE POTENTIAL CONDITION WHILE APPLYING THE ABOVE CRITERIA.

NOTES:

B. Snags for Wildlife [2/]

Snags (i.e., standing dead trees) provide a portion of the life support system for many species of birds and mammals.

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Snags 2-5/acre greater than 10 inches diameter at breast height (dbh) and 5 per acre, 4-10 inches dbh.	1.0			
Snags 1 to 4 per acre 4-10 inches dbh and at least 1 per acre greater than 10 inches dbh.	0.5			
Snags 1 to 4 per acre 4 to 10 inches dbh.	0.3			
No snags.	0.0			

NOTES:

[2/] Snags must be well distributed in the forest stand to be most effective in the number of pairs of cavity-nesting birds and mammals they will support. Small clumps of snags well distributed in the stand are most effective.

C. Dead and Down Logs for Wildlife

Fallen logs provide habitat structure necessary for many species of birds mammals, reptiles and amphibians.

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
>5 down logs/acre >10" dbh	1.0			
2-5 down logs/acre >10" dbh	0.5			
<2 down logs/acre >10" dbh	0.2			
No down logs	0.0			

NOTES:

D. Riparian Habitat [3/] (N/A if not present)

Plant communities with structural characteristics providing vertical and horizontal habitat diversity for wildlife and shading to lower stream temperatures.

Plant Community Components

Grass/forb
Low shrub (<8' tall)
Tall shrub (>8' tall)
Tree

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Plant community with all 4 of the above components	0.8			
Plant community with all 3 of the above components	0.6			
Plant community with all 2 of the above components	0.4			
Plant community with all 1 of the above components	0.1			

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS FOR RIPARIAN STANDS WITH ALL OF THE FOLLOWING: TALL (MATURE) TREE; MID-CANOPY TREE; TALL SHRUB; LOW SHRUB/HERBACEOUS LAYERS PRESENT; WOODY PLANTS ARE REGENERATING.

SUBTRACT:
0.2 POINTS FOR GRAZING WITHOUT A PLANNED GRAZING SYSTEM THAT INCLUDES SPECIFIC RIPARIAN MANAGEMENT OBJECTIVES.
0.2 POINTS FOR LACK OF ACTIVE CONTROL OF SALT CEDAR OR RUSSIAN OLIVE.
0.1 POINTS FOR LACK OF ACTIVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN.

[3/] Rate riparian lands only when they occur within or immediately adjacent to the planning unit.

NOTES: SOME RIPARIAN HABITATS DO NOT HAVE THE POTENTIAL FOR ALL FOUR OF THE PLANT COMMUNITY COMPONENTS LISTED ABOVE. LOW GRADIENT, "WET MEADOW" HABITATS, FOR EXAMPLE, MAY NOT SUPPORT ANY WOODY VEGETATION. MANY HIGHER ELEVATION STREAM-SIDE HABITATS MAY NOT HAVE THE POTENTIAL FOR COTTONWOODS AND OTHER TREE SPECIES. IN SUCH SITUATIONS, USE JUDGMENT IN COMPARING THE EXISTING RIPARIAN CONDITION WITH THE POTENTIAL CONDITION AND SCORE THE HABITAT ELEMENT ACCORDINGLY.

NOTES:

E. Condition of Stream Habitat (N/A if not present)

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
No channel/streambank alteration, i.e., channelization, riprap; banks well vegetated with deep-rooted, native species; no active downcutting, channel widening, or excessive sediment deposition.	1.0			
No channel/streambank alteration; banks with minimal human-induced erosion or sediment deposition (may be evidence of past downcutting, now stabilized); native vegetation predominates.	0.7			
No channel/streambank alteration; shallow-rooted, introduced plants common; human-induced bank erosion, downcutting, or sediment deposition moderate.	0.4			
Excessive human-induced bank erosion, sediment deposition, or downcutting; or channel/bank alteration, e.g., channelization, riprap, etc., on >20% of the stream reach.	0.1			

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS FOR USE OF SCREENS TO PREVENT ENTRAINMENT OF FISH INTO IRRIGATION DITCHES
0.2 PASSAGE STRUCTURE TO ALLOW FREE MOVEMENT OF FISH (IF ECOLOGICALLY APPROPRIATE).

SUBTRACT:
0.2 POINT FOR SEASONAL WATER WITHDRAWALS AND/OR DROP STRUCTURES, DAMS/DIVERSIONS THAT INHIBIT FISH MOVEMENT OR ACCESS TO IMPORTANT HABITATS ON LANDOWNER'S PROPERTY (IF ECOLOGICALLY APPROPRIATE).

NOTE: CHANNEL/STREAMBANK ALTERATION INCLUDES RIPRAP, CHANNELIZATION, DREDGING, ETC. HUMAN-INDUCED EROSION INCLUDES GRAZING, RECREATION AND DEVELOPMENT IMPACTS.

NOTES:

F. Condition of Wetland Habitat (N/A if no wetlands present naturally)
Mean Wetland Score (Average of Items 1-3)_____

1. Hydrological Integrity

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
No hydrological modifications.	1.0			
Minor hydrological modification. Primary hydrologic functions still present. For example: vegetation alterations such as removal of woody vegetation or light grazing.	0.7			
Moderate hydrological modifications. Hydrological functions are impaired and are not fully functional. For example: negative impacts from farming operations or substantial grazing.	0.5			
Significant hydrological modification. Hydrological functions have been significantly impaired to the extent that wetland criteria are not being met. For example: wetland fill, drainage ditches, stock water pits, drain tile, or pumping activities.	0.1			

ADD: (MAXIMUM SCORE = 1.0)
0.2 POINTS IF WETLANDS ARE PROTECTED FROM SEDIMENTATION BY VEGETATIVE BUFFERS.

NOTES:

2. Native Hydrophytic Vegetation Integrity

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Native hydrophytic vegetation (all canopy layers) predominates.	1.0			
Native hydrophytic vegetation predominates; some reduction in structural diversity (i.e., invasion of non-native species and/or partial loss of one or more plant canopy layers).	0.5			
Non-native plant species predominate.	0.3			
The following noxious weeds are present and not actively being controlled: purple loosestrife, common tansy, Eurasian milfoil, curlyleaf pondweed, flowering rush, salt cedar.	0.1			

SUBTRACT:
0.2 POINTS FOR LACK OF ACTIVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN (SPECIES NOT LISTED ABOVE).

NOTES:

3. Wetland Management

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Wetland habitat is managed for wildlife.	1.0			
Light grazing (only occasional livestock use or use a rotational grazing system that does not allow deterioration of wetland vegetation), or occasional (one of five years) haying, but not cultivated.	0.7			
Moderate grazing (vegetative buffer present on at least half of shoreline), or frequent cultivation or haying.	0.4			
Heavy grazing or cultivation throughout the growing season.	0.2			

NOTES:

G. Condition of Woody Draws (N/A if not present)

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
Closed canopy of tree* species with a diversity of age and size classes present. Shrub layer present with diverse age/size class distributed – dominated by multiple species. Herbaceous understory is at least 50% native species and includes both grasses and forbs.	1.0			
Tree* and shrub layers are missing younger age classes to a small degree. Herbaceous understory consists of less than 50% native species, but contains both forbs and grasses that are generally in good health and density.	0.6			
Tree* and shrub layers are missing younger and middle age classes from a moderate to significant degree. Herbaceous understory moderately dense to sparse and consists of less than 25% native species. Forb component is generally lacking.	0.4			
Open Stand of tree* species with little to no age and size class diversity. Horizontal shrub layer is reduced to absent; represented only by older individuals. Herbaceous layer dominated by introduced grasses (e.g., smooth brome, quackgrass, Kentucky bluegrass).	0.1			

* IN WOODY DRAWS WHERE THERE IS NO POTENTIAL FOR TREES: APPLY THE CRITERIA AS WRITTEN FOR THE SHRUB AND HERBACEOUS CRITIERIA ONLY.

SUBTRACT:
0.2 POINTS FOR GRAZING WITHOUT A MANAGEMENT PLAN
0.2 POINTS FOR LACK OF ACTVELY APPLIED NOXIOUS WEED MANAGEMENT PLAN
0.2 POINTS FOR ANIMAL DAMAGE TO TREES AND SHRUBS
0.2 POINTS FOR WOODY DRAWS THAT HAVE RUSSIAN OLIVES PRESENT.

NOTES:

4. Summation of Habitat Elements

	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
A. Forest and Woodland Community	0.8			
B. Snags for Wildlife	1.0			
C. Dead and Down Logs for Wildlife	0.8			
D. Riparian Habitat	1.0			
E. Condition of Stream Habitat	1.0			
F. Condition of Wetland Habitat	1.0			
G. Condition of Woody Draws	1.0			
TOTAL				

5. Habitat Value [4/] = Total Score / Number of Inventory Factors Rated _____ _____ _____

6. Habitat elements in need of improvement: [5/]

NOTES:

7. Planning alternatives for improving habitat element deficiencies:

NOTES:

[4/] In order to meet the FOTG Planning criteria for a Resource Management System, the planned system must provide a Habitat Value of 50% or higher (0.5 out of 1.0) for the CTU.

[5/] Any habitat element(s) (A through G) with a score of less than 0.5 may be considered as a limiting factor(s). Where possible and practical, direct habitat improvements to compensate for identified limitations.

POLLINATOR HABITAT EVALUATION GUIDE FOR MONTANA

The Pollinator Habitat Evaluation Guide (PHEG) provides the NRCS planner with a relatively simple and objective procedure for determining the value of pollinator habitat for an area where a landowner is interested in the creation or enhancement of habitat. The guide can be used on land where pollinators are a primary or secondary resource concern. It can be used to evaluate habitat on rangeland, cropland, pasture, forestland, farmsteads, and associated agricultural lands. There is no minimum size for land to be appraised as pollinator habitat. However, tracts of less than 0.5 acres may be limited as habitat by their size alone. A site to be evaluated should be of a consistent land type (i.e., similar ecological sites, vegetation, soils, and management). If there are multiple sites to be evaluated, the PHEG should be applied to each one individually so each one is assessed separately.

The PHEG can be used to determine if a site meets the minimum planning criteria found in Field Office Technical Guide (FOTG), Section III, Resource Concerns and Planning Criteria. Conservation practices and management measures can be identified to meet the minimum conservation standards or to meet higher habitat quality objectives of the landowner.

The PHEG utilizes a numerical rating to compare the value of existing pollinator habitat with the value of pollinator habitat under various alternatives. The guide has been developed to consider the needs of a variety of species of pollinators, a goal commonly referred to as management for species richness.

Instructions for Using the Pollinator Habitat Evaluation Guide

1. Determine the landowner or land user's objectives regarding their overall conservation program, interest in pollinators, and the specific conservation practices desired.

2. Based on your or the landowner's knowledge of the planning area, identify pollinator species present on the site and their seasons of use. Are species present or desired that require special habitat?

3. Delineate the area to be evaluated on an aerial photo or other suitable planning map.

4. Use best available information for soil suitability and methods for the establishment of plants for pollinators.

5. Rating habitat quality and quantity is best done in the field with the landowner. Visit enough of the site to accurately evaluate exiting habitat conditions. Percent cover estimates are qualitative visual estimates. Keep in mind that this is a guide and use judgment when evaluating habitat. Do not interpolate between numerical values when rating a factor – use the values provided on the form.

6. After the total habitat value has been determined, look back through individual scores to find those factors that are deficient and could be improved. Any habitat element(s) that scores less than 0.5 is considered as a limiting factor. Habitat improvement efforts should be directed to overcome such limitations.

7. Calculating the Habitat Value:

   Total the scores for the factors rated and divide this total by the total number of factors.

   $$\text{HABITAT VALUE:} \frac{\text{Total Score}}{\text{Number of Factors Rated}}$$

8. With the landowner, develop alternatives for improving deficient factors. If alternatives are developed, then document the existing site conditions under the existing column of the form and then list the alternative scores under alternative 1 and/or 2 of the form. Document the proposed alternative actions in the note sections of each habitat element considered.

   For plant species lists, refer to Montana Biology Technical Note No. MT-20 (Rev. 9) *Creating and Enhancing Habitat for Pollinator Insects*. For further planning guidance, refer to the Montana Biology and Plant Materials Technical Notes, FOTG Section IV, and Montana Honey Bee Pollinator Initiative Guidance documents.

POLLINATOR HABITAT EVALUATION FORM

Owner/Operator	County	Date
Location	Acres in Planning Unit	Field Number(s)

Land use in planning unit:
Cropland_____ Pasture_____ Rangeland_____ Forest_____ Other_____

1. Landowner's management objective(s):

2. Landowner's pollinator conservation objective(s):

3. Pollinator species commonly found on the project site and their season of use:

4. **Pollinator Foraging Habitat**:
Diversity and abundance of flowering, particularly native, plants and season-long blooms. Do not count invasive or noxious species (e.g., knapweeds, Canada thistle, oxeye daisy, etc.).

A. Forage Plant Cover - Estimate the percent vegetative cover that is native or non-native wildflowers or flowering shrubs or trees used by pollinators. Do not count invasive or noxious species. Only count species representing greater than 1% cover of the site being evaluated.

Percent Forage Plant Cover	Possible Score	Total Actual Score		
		Existing	Alternative	
			1	2
Pollinator Forage Cover is > 50%	1.0			
Pollinator Forage Cover is 30% to 50%	0.8			
Pollinator Forage Cover is 20% to 30%	0.5			
Pollinator Forage Cover is 10% to 20%	0.3			
Pollinator Forage Cover is < 10%	0.0			

NOTES:

B. Forage Plant Composition – Early Season (April - June) - Estimate the number of spring-blooming native or non-native forb, legume, tree and shrub species that provide floral resources to pollinators. Do not count invasive or noxious species.

Number of Spring Blooming Species	Possible Score	Total Actual Score		
		Existing	Alternative	
			1	2
7 + species	1.0			
4 to 6 species	0.8			
2 to 4 species	0.5			
1 to 2 species	0.3			
0 species	0.0			

NOTES:

C. Forage Plant Composition – Mid Season (July - August) - Estimate the number of summer-blooming native or non-native forb, legume, tree and shrub species that provide floral resources to pollinators. Do not count invasive or noxious species.

Number of Summer Blooming Species	Possible Score	Total Actual Score		
		Existing	Alternative	
			1	2
7 + species	1.0			
4 to 6 species	0.8			
2 to 4 species	0.5			
1 to 2 species	0.3			
0 species	0.0			

NOTES:

D. Forage Plant Composition – Late Season (September - October) - Estimate the number of fall-blooming native or non-native forb, legume, tree and shrub species that provide floral resources to pollinators. Do not count invasive or noxious species.

Number of Fall Blooming Species	Possible Score	Total Actual Score		
		Existing	Alternative	
			1	2
5 + species	1.0			
3 to 4 species	0.8			

1 to 2 species	0.3			
0 species	0.0			

NOTES:

5. **Pollinator Nesting and Overwintering Habitat**:
Native pollinators have a variety of nesting requirements. About 70% of native bees in North America nest in the ground, while 30% nest in cavities in wood or stems. Protecting existing nests and nesting habitat is important. Permanent plantings increase the amount of undisturbed ground which increases habitat for ground nesting bees and other insects. If grasses are to be planted as part of habitat enhancement, use bunchgrasses.

A. Nesting Habitat: Stem / Wood Nesting - Estimate the percent cover of shrubs/woody plant species with hollow/pithy stems (e.g. elderberry, ninebark) or large sturdy forbs with hollow/pithy stalks (e.g. asters, goldenrod, fireweed).

Percent Cover	Possible Score	Total Actual Score		
		Existing	Alternative	
			1	2
> 10%	1.0			
8%	0.8			
5%	0.5			
3%	0.3			
< 3%	0.0			

NOTES:

B. Overwintering Habitat: Bunchgrasses - Estimate the percent cover of bunchgrasses.

Percent Cover	Possible Score	Total Actual Score		
		Existing	Alternative	
			1	2
> 10%	1.0			
8%	0.8			
5%	0.5			
3%	0.3			
< 3%	0.0			

NOTES:

C. Overwintering Habitat: Mowing or Burning - Some species of pollinators including bumble bees overwinter in leaf litter, bunchgrasses, or other plant debris. In order to preserve overwintering habitat for bumble bees and other pollinators, minimize ground disturbance (mowing or burning) to the site. Estimate the proportion of the site that is mowed or burned every year.

Proportion of Site	Possible Score	Total Actual Score		
		Existing	Alternative	
			1	2
For large-scale pollinator habitat: Mowing and/or burning is applied to less than 1/3 of the site during each year OR For small-scale pollinator habitat: Ground-disturbing activity is applied to less than 1/2 of the site during each year	1.0			
For large-scale pollinator habitat: Mowing and/or burning is applied to more than 1/3 of the site during each year OR For small-scale pollinator habitat: Ground-disturbing activity is applied to more than 1/2 of the site during each year	0.0			

NOTES:

6. **Pesticide Risk**:
Pesticides can adversely affect pollinators and pollinator habitat. It is important that habitats established to attract pollinators be protected from pesticides when possible. Talk with the client to assess threats of pesticide application and plan to mitigate against potential threats. This includes areas adjacent to pollinator habitat that may not be controlled by the client.

A. Insecticide Risk - If insecticides or insecticidal seed treatments are used within 100 feet of the site, use the following mitigation techniques to minimize exposure of pollinators to insecticide drift.

Insecticide Risk	Possible Score	Total Actual Score		
		Existing	Alternative	
			1	2
Site is > 100 feet from any area treated with insecticides, including insecticidal seed treatments (e.g. cropland)	1.0			
Both of the following are met: 1) Site is > 30 feet from any area treated with insecticides, including insecticidal seed treatments AND 2) Off-site drift prevention or mitigation practices and/ or techniques from Table 3 of Agronomy Tech	0.8			

Note 9[1] are implemented to meet a target index score of at least 30.				
Either of the following are met: 1) Site is > 30 feet from any area treated with insecticides, including insecticidal seed treatments OR 2) Off-site drift prevention or mitigation practices and/ or techniques from Table 3 of Agronomy Tech Note 9 are implemented to meet a target index score of at least 30.	0.5			
Off-site drift prevention or mitigation practices and/or techniques from Table 3 of Agronomy Tech Note 9 are implemented to meet a target index score of at least 20.	0.3			
All of the following are met: Any portion of the site is located < 30 feet of areas treated with insecticides or insecticide treated seed (e.g. cropland). AND No practices are implemented for the purpose of preventing or mitigating insecticide risks.	0.0			

[1]USDA-NRCS and The Xerces Society. 2014. Preventing or Mitigating Potential Negative Impacts of Pesticides on Pollinators Using Integrated Pest Management and Other Conservation Practices, Agronomy Technical Note 9. USDA-NRCS, West National Technical Support Center, Portland, OR

NOTES:

B. Herbicide Risk - If herbicides are used to treat vegetation in the project site, use the following scoring. If the project site is more than 100 feet from any area treated with herbicides OR herbicides are used within 100 feet of the site but are applied in a way that minimizes drift (boom sprayer low to the ground or spot applied), the site is not considered subject to drift.

	Possible Score	**Total Actual Score**		
		Existing	**Alternative**	
			1	**2**
Site is not treated with or subject to drift from any herbicides.	1.0			
Site is treated with or subject to drift from selective herbicides that do not affect pollinator habitat.	0.5			
Site is treated with or subject to drift from non-selective or broad-spectrum herbicides.	0.0			

NOTES:

7. Summation of Habitat Elements

Factors Rated	Possible Score	Total Actual Score		
			Alternative	
		Existing	1	2
4.A. Forage Plant Cover	1.0			
4.B. Forage Plant Composition – Early Season	1.0			
4.C. Forage Plant Composition – Mid Season	1.0			
4.D. Forage Plant Composition – Late Season	1.0			
5.A. Nesting Habitat: Stem / Wood Nesting	1.0			
5.B. Overwintering Habitat: Bunchgrasses	1.0			
5.C. Overwintering Habitat: Mowing or Burning	1.0			
6.A. Insecticide Risk	1.0			
6.B. Herbicide Risk	1.0			
TOTAL SCORE				

8. Habitat Value[1] = Total Score / Number of Factors Rated

9. Habitat elements in need of improvement[2]:

NOTES:

10. Planning alternatives for improving habitat element deficiencies:

NOTES:

[1] In order to meet Planning Criteria, must have a Habitat Value of 50% or higher (0.5 out of 1.0).

[2] Any habitat element(s) with a score of less than 0.5 is considered a limiting factor(s). Where possible and practical, implement habitat improvement efforts to address such identified limitations.

Print Form

Clear Form